

## Supplementary information

### Photothermal self-healing of gold nanoparticle-polystyrene hybrids

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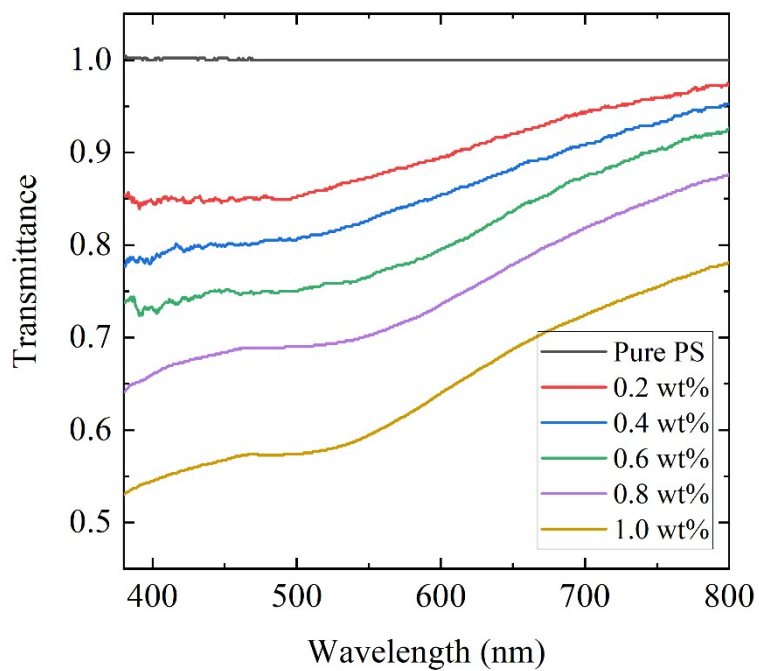


Fig. S1. Transmittance of the PS films with different Au contents in the visible light range obtained from UV-Vis tests.

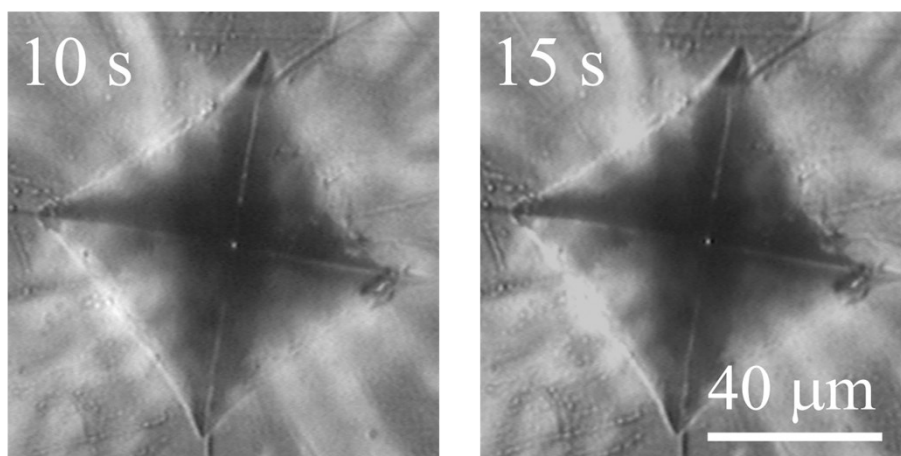


Fig. S2. Morphological evolution for an 80  $\mu\text{m}$ -sized indent in the pure PS film under irradiation of 532 nm laser, showing no healing of the indent.

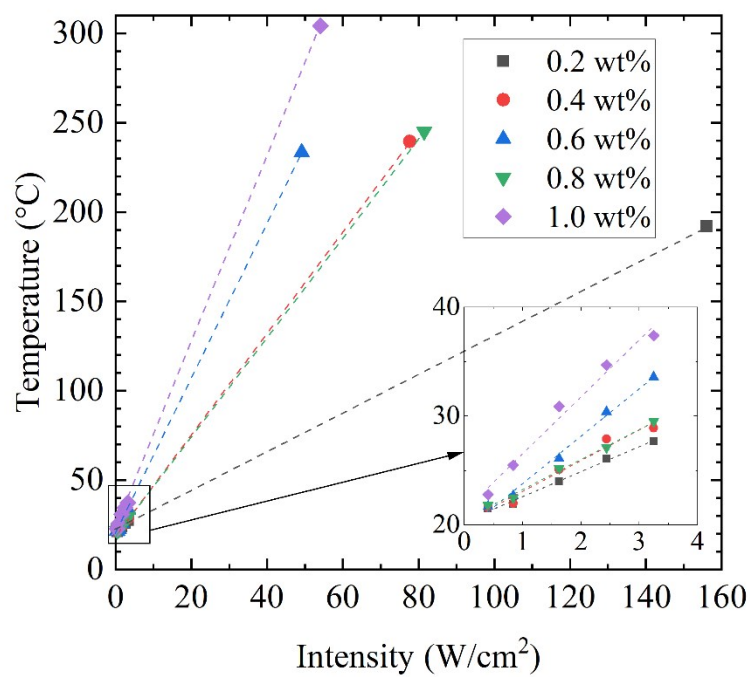


Fig. S3. Film temperatures under irradiation. The inset depicts the measured temperatures while the points outside of the inset are the extrapolated temperatures using linear fitting.